The increasing importance that is being placed on productivity improvements and data management in recent years has led to a rise in the need to mark information directly onto products. The information extends from general product and production information to a production history that tells exactly how the product was manufactured.

Data management in which space-efficient 2D codes are directly stamped onto products is making particularly rapid progress. For a variety of reasons, however, such as the fact that the surface on which the 2D codes are stamped lacks smoothness, conventional handheld readers have difficulty reading them with sufficient stability.

The V400-H Series was developed from the concept of creating a handheld reader that is capable of reading directly marked codes. It accurately reads 2D codes directly marked onto metallic or LCD panels, printed circuit boards, and other objects.
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of Reading Directly Marked Codes

Stable Reading from a Wide Variety of Objects

One of the industry's most advanced reading algorithms combines with an optical system that is highly suited to direct marking applications, to deliver highly accurate reading capabilities. The Reader is also equipped with its own coaxial illumination and oblique illumination. The illumination is automatically switched to match the object being read, enabling superior reading of 2D codes marked onto materials with different reflection factors.

Stable Reading from a Wide Variety of Objects

Bringing Greater Visibility to 2D Code Reading

- The LCD monitor lets you confirm the position of the 2D code, then displays the reading results and image.
- Using the detachable Contactor greatly simplifies positioning.

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Authorized Distributor:

Patent pending

This document provides information mainly for selecting suitable models. Please refer to the User's Manual (Cat. No. Z228) for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.

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Patent pending
Designed for Easy Use on Production Lines

Variable Field of Vision

The zoom lever lets you easily change the field of vision to match the size of the code being read.

<table>
<thead>
<tr>
<th>Narrow Field of Vision (V400-H111)</th>
<th>Wide Field of Vision Model (V400-H211)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td><strong>Size</strong></td>
</tr>
<tr>
<td>TELE</td>
<td>TELE</td>
</tr>
<tr>
<td>5 x 5 to 10 x 10 mm</td>
<td>15 x 15 to 30 x 30 mm</td>
</tr>
<tr>
<td>(Minimum cell size: 70 µm)</td>
<td>(Minimum cell size: 200 µm)</td>
</tr>
</tbody>
</table>

Display Customizing Function

The 2D code data that is read can be displayed on the LCD as a previously registered text string.*

* Special software is available for set-up. See the operation manual for details.

Easy-to-hold Grip Shape

Grooves along the bottom surface of the grip ensure a good fit even when wearing gloves.

Easy-to-see Contactor

The transparent material used in the Contactor improves visibility.

AC Adaptor Also Available

Select either a 5-VDC Power Supply or an AC Adaptor to match the conditions of use. (Each uses a different cable model.)

Two Hanging Hooks

Hanging hooks on both upper and lower parts of the Code Reader allow it to be easily hung somewhere near the production line.

Safe Protective Structure

An IP64 enclosure rating prevents adverse effects from water splashing on the line.

Target Object Protective Cover

A rubber protector on the surface that contacts the object prevents scratches.

Two Cable Lengths Available:

- 2 Meters
- 5 Meters

Two hanging hooks on both upper and lower parts of the Code Reader allow it to be easily hung somewhere near the production line.

The transparent material used in the Contactor improves visibility.

Each uses a different cable model.

The阅读结果可以显示在四种模式中匹配你的应用。
Patent pending

The 2D code data that is read can be displayed on the LCD as a previously registered text string.*

* Special software is available for set-up. See the operation manual for details.

Variable Field of Vision

The zoom lever lets you easily change the field of vision to match the size of the code being read.

Wide Field of Vision Model (V40D-H211)

Size

Width

5 \times 5 to 10 \times 10 mm

(Minimum cell size: 70 \mu m)

15 \times 15 to 30 \times 30 mm

(Minimum cell size: 200 \mu m)

Display Customizing Function

The 2D code data that is read can be displayed on the LCD as a previously registered text string.*

* Special software is available for set-up. See the operation manual for details.

Versatile LCD Display Patterns

The reading results can be displayed in four patterns to match your application.

Designed for Easy Use on Production Lines

Read Data Is Stored onto an SD Memory Card

The 2D code data read by the Code Reader can be stored onto an SD Memory Card together with a time stamp.

Easy-to-press Trigger Buttons

The trigger buttons are positioned where the thumb is naturally placed when holding the Code Reader's grip.

Settings Can Be Changed On-site

Changes can be made to the settings without having to use a personal computer.

Safe Protective Structure

An IP64 enclosure rating prevents adverse effects from water splashing on the line.

Easy-to-see Contactor

The transparent material used in the Contactor improves visibility.

Target Object Protective Cover

A rubber protector on the surface that contacts the object prevents scratches.

Two Hanging Hooks

Hanging hooks on both upper and lower parts of the Code Reader allow it to be easily hung somewhere near the production line.

Easy-to-see Grooves

Grooves along the bottom surface of the grip ensure a good fit even when wearing gloves.

Easy-to-hold Grip Shape

Two Cable Lengths Available: 2 Meters and 5 Meters

AC Adaptor Also Available

Select either a 5-VDC Power Supply or an AC Adaptor to match the conditions of use. (Each uses a different cable model.)

TELE

15 \times 15 to 30 \times 30 mm

(200 \mu m)

WIDE

5 \times 5 to 10 \times 10 mm

(70 \mu m)

TELE

5 \times 5 to 10 \times 10 mm

(70 \mu m)

WIDE

15 \times 15 to 30 \times 30 mm

(200 \mu m)
Examples of Typical Applications

2D Codes on Metallic Parts
- Cylinder head, cylinder block

2D Codes on Printed Circuit Boards
- 2D Codes on LCD Glass Panels
- 2D Codes on Electronic Components (Crystal oscillators, ICs)

System Configuration

The Code Reader can be connected with other equipment via RS232C.

Ordering Information

Main Unit

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>Communications interface</th>
<th>Field of vision</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D Code Reader</td>
<td>V400-H111</td>
<td>RS-232C</td>
<td>5 x 5 to 10 x 10 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V400-H211</td>
<td>RS-232C</td>
<td>15 x 15 to 30 x 30 mm</td>
<td></td>
</tr>
</tbody>
</table>

Accessories (Purchase separately)

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>Cable length</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contactor</td>
<td>V400-AC2</td>
<td>--</td>
<td>Contactor for positioning (detachable)</td>
</tr>
<tr>
<td></td>
<td>V400-W20-2M</td>
<td>2 m</td>
<td>For SYSMAC Series connection (with power cord)</td>
</tr>
<tr>
<td></td>
<td>V400-W20-5M</td>
<td>5 m</td>
<td>For SYSMAC Series connection (with power cord)</td>
</tr>
<tr>
<td></td>
<td>V400-W21-2M</td>
<td>2 m</td>
<td>For PC-compatible connection (with power cord)</td>
</tr>
<tr>
<td></td>
<td>V400-W21-5M</td>
<td>5 m</td>
<td>For PC-compatible connection (when using AC Adaptor)</td>
</tr>
<tr>
<td></td>
<td>V400-W22-2M</td>
<td>2 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V400-W22-5M</td>
<td>5 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V600-A22</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

Ratings and Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>V400-H111</th>
<th>V400-H211</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of vision</td>
<td>5 x 5 to 10 x 10 mm</td>
<td>15 x 15 to 30 x 30 mm</td>
</tr>
<tr>
<td>Working distance</td>
<td>40 mm (flush when Contactor is mounted)</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>5 VDC ±10%</td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>1.3 A max</td>
<td></td>
</tr>
<tr>
<td>Serial interface</td>
<td>RS-232C</td>
<td></td>
</tr>
<tr>
<td>Applicable codes</td>
<td>Data Matrix, ECC200, 10 to 100 x 10 to 1000, QR Code (Versions 1 to 10)</td>
<td></td>
</tr>
<tr>
<td>Operation method</td>
<td>Pulsing the trigger button</td>
<td></td>
</tr>
<tr>
<td>Settings</td>
<td>Main settings by using the manual setting window, uploading from an SD Memory Card, or by using Support Software</td>
<td></td>
</tr>
<tr>
<td>Memory card</td>
<td>SD Memory Card</td>
<td></td>
</tr>
<tr>
<td>Printer</td>
<td>1.6-inch TFT LCD, displaying images and read data</td>
<td></td>
</tr>
<tr>
<td>Print Quality</td>
<td>300 dots/cm², up to 100 images/second</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>Operations 0 to 40°C, storage -25 to 60°C</td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>35 to 80% (with no condensation)</td>
<td></td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>10 to 1500 Hz, single amplitude 0.25 g (20 mm/s max. acceleration)</td>
<td></td>
</tr>
<tr>
<td>Shock resistance</td>
<td>155 m/s² in X, Y, and Z directions, 3 times</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 230 g</td>
<td></td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IEC 60529 IP64</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>Case: ABS, optical surface: PC, display surface: PMMA</td>
<td></td>
</tr>
</tbody>
</table>
### Examples of Typical Applications

#### 2D Codes on Metallic Parts
- Cylinder head, cylinder block
- Camshaft

#### 2D Codes on Printed Circuit Boards

#### 2D Codes on LCD Glass Panels

#### 2D Codes on Electronic Components (Crysal oscillators, ICs)

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<tr>
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<th>Model</th>
<th>Specifications</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2D Code Reader</td>
<td>V400-H111</td>
<td>Communications interface: RS-232C</td>
<td>Field of vision: 5-10 x 10-20 mm</td>
</tr>
<tr>
<td></td>
<td>V400-H211</td>
<td>Communications interface: RS-232C</td>
<td>Field of vision: 15-30 x 30 mm</td>
</tr>
</tbody>
</table>

#### Accessories (Purchase separately)

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>Cable length</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contactor</td>
<td>V400-AC2</td>
<td>---</td>
<td>Contactor for positioning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(detachable)</td>
</tr>
<tr>
<td>Communications Cable</td>
<td>V400-W20-2M</td>
<td>2 m</td>
<td>For SYSMAC Series connection</td>
</tr>
<tr>
<td></td>
<td>V400-W20-5M</td>
<td>5 m</td>
<td>(with power cord)</td>
</tr>
<tr>
<td></td>
<td>V400-W21-2M</td>
<td>2 m</td>
<td>For PC-compatible connection</td>
</tr>
<tr>
<td></td>
<td>V400-W21-5M</td>
<td>5 m</td>
<td>(with power cord)</td>
</tr>
<tr>
<td></td>
<td>V400-W22-2M</td>
<td>2 m</td>
<td>For PC-compatible connection</td>
</tr>
<tr>
<td></td>
<td>V400-W22-5M</td>
<td>5 m</td>
<td>(when using AC Adaptor)</td>
</tr>
<tr>
<td>AC Adaptor</td>
<td>V400-A22</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>

#### Ratings and Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>V400-H111</th>
<th>V400-H211</th>
<th>V400-H221</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of vision</td>
<td>0-5 x 5 to 10 x 10 mm</td>
<td>15-30 x 30 mm</td>
<td></td>
</tr>
<tr>
<td>Working distance</td>
<td>40 mm (flush when Contactor is mounted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>5 VDC ±10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>1.0 A max</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial interface</td>
<td>RS-232C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable codes</td>
<td>Data Matrix, ECC200, 10-20 x 10-20 mm, QR Code (Model 1, 2), 21-2 of 37 (Versions 1 to 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation method</td>
<td>Scanning the target with a laser beam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settings</td>
<td>Main settings by using the manual setting window, uploading from an SD Memory Card, or by using Support Software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory card</td>
<td>SD Memory Card</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor</td>
<td>1.0 inch TFT LCD, displaying images and read data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display illumination</td>
<td>Decoder display, memory card access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>Operations: 5 to 40°C; storage: -25 to 60°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>30 to 80% (with no condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No condensation</td>
<td>No condensation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>10 to 150 Hz, single amplitude 0.05 mm (50 mm max. acceleration)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shock resistance</td>
<td>150 m/s² in x, y, and z directions, 3 times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 260 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IEC 60529 IP64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>Case: ABS; optical surface: PC; display surface: PMMA</td>
<td></td>
<td></td>
</tr>
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Stable Reading from a Wide Variety of Objects

One of the industry's most advanced reading algorithms combines with an optical system that is highly suited to direct marking applications, to deliver highly accurate reading capabilities. The Reader is also equipped with its own coaxial illumination and oblique illumination. The illumination is automatically switched to match the object being read, enabling superior reading of 2D codes marked onto materials with different reflection factors.

Bringing Greater Visibility to 2D Code Reading

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Dimensions (Unit: mm)

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